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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/608,274

06/27/2003

Leonid Krasny

P18034-US1

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7590

04/30/2008

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EXAMINER

VO, DON NGUYEN

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

04/30/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/608,274	Applicant(s) KRASNY ET AL.	
	Examiner Don N. Vo	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Acknowledgment

1. This Office Action is responsive to the Amendment filed on 1/14/2008.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 11, 12, 21, and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation of claim 11 is vague and indefinite because it is unclear of how the two steps are related. That is, the claim is being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

Similar problem exists for the recitation of claim 21.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 9-14, 19-23, and 26-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Papasakellariou (US 6,700,919; art of record).

Regarding claims 1, 2, 9-14, 19-23, and 26-28, Papasakellariou, as shown in figures 2-4, teaches a receiver comprising a channel estimator (26) to determine an initial channel estimate (52) and the initial channel estimate is iteratively updated or modified (biased) (56, 58, 60, 62) to be used for demodulating (64). See also column 6, line 13 to column 12, line 10.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 3-8, 15-18, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Papasakellariou (US 6,700,919; art of record) in view of Magee (US 2003/0076904; art of record).

Regarding claims 3-8, 15-18, 24 and 25, Papasakellariou teaches all subject matter claimed except for further teaching the steps of transforming, performing and inverse transforming in order to provide the biased to the initial channel estimate. However, Magee, from the same field of endeavor and as shown in figures 9-11, teaches a method and apparatus for calculating the scaled channel estimate by transforming (FFT), performing (126) and inverse transforming (IFFT). See also paragraphs [0055] – [0068]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the receiver of Papasakellariou by employing the teaching of Magee since it is just an alternative way of calculating the channel estimate.

Response to Arguments

9. Applicant's arguments filed 1/14/2008 have been fully considered but they are not persuasive. Applicant traverses to the rejections by mainly arguing that the present invention (as claimed in the independent claims 1, 11, 13, 21, 23 and 28) “only uses the received signal samples obtained *over the training sequence* (but not the received signal obtained over information data) during both the initial stage, and the subsequent stage of adding a bias to the initial channel estimate.” Whereas, the cited reference Papasakellariou (US 6,700,919) uses the received signal over information data for

determining channel estimate and subsequent stage of improving the channel estimate. The examiner is respectfully not agreed.

As shown in figure 4 and disclosed at column 9, lines 19-22, Papasakellariou teaches determining the initial channel estimate based only on the pilot data (training sequence) and subsequently, the initial channel estimate is iteratively updated or modified (biased) based on the pilot data and also on the information data. That is, Papasakellariou teaches determining the initial channel estimate based on the pilot data and updating or modifying the initial channel estimate based also on the pilot data. Moreover, each of the independent claims 1, 11, 13, 21, 23 and 28 does not specify or recite that “**only**” the training sequence is used for determining the initial channel estimate and subsequently, adding a bias to the initial channel estimate, i.e. exclusive of using information data.

Based on the above rationale, it is believed that the claimed limitations are met by Papasakellariou (US 6,700,919) and, therefor, the rejections to claims 1-28 are still maintained.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Don N. Vo whose telephone number is (571) 272-3018. The examiner can normally be reached on Mon-Fri (9:00AM - 6:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MOHAMMAD GHAYOUR can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Don N. Vo/
Primary Examiner, Art Unit 2611